

WHAT IS CLAIMED IS:

1. A circuit board comprising:  
at least two wiring layers;  
5 an insulator layer for electrically insulating said wiring layers;  
a via provided in said insulator layer to electrically connect said wiring layers each other; and  
a protective agent dispersed and placed in mottle-like  
10 on an interface between said via and said wiring layer to protect said wiring layers, wherein:  
each dimension of said interface regions where said protective agent does not exist is set to such a dimension that a plurality of conductive powders constituting said via may  
15 abutted on said wiring layer; and  
the plurality of said conductive powders and said wiring layers are abutted each other in each said interface regions where said protective agent does not exist to electrically connect.  
20
2. The circuit board according to Claim 1, wherein said protective agent is provided on a surface of said wiring layer.
3. The circuit board according to Claim 1, wherein said  
25 protective agent contains zinc and nickel.
4. The circuit board according to Claim 1, wherein said protective agent has a function to enhance an adhesion strength between said via and said wiring layers.  
30
5. The circuit board according to Claim 4, wherein said protective agent contains a chromate or a silane coupling agent.

6. The circuit board according to Claim 1, wherein said conductive powders and said wiring layers are joined to each other by metallic agglutination.

5

7. The circuit board according to Claim 6, wherein a region where metallic agglutination occurs between said wiring layers and said conductive powders is set at 0.03% or more than a cross-sectional area of said via.

10

8. The circuit board according to Claim 1, wherein said via is a resin component containing a conductor.

15

9. The circuit board according to Claim 1, wherein said conductive powders contained in said via are the same conductor contained in said wiring layers.

20

10. The circuit board according to Claim 1, wherein said wiring layers contain copper.

11. The circuit board according to Claim 1, wherein said conductive powders contain at least one of copper and silver.

25

12. The circuit board according to Claim 1, wherein said insulator layer is composed of a polymer film.

13. A circuit board manufacturing method comprising the steps of:

30

forming a through hole on an insulator layer and then filling said through hole with a conductive paste;

dispersing and forming a protective agent in mottle-like on an adhesion surface of a conductor foil which

provides a wiring layer, and dispersing and forming each dimension of adhesion surface regions where said protective agent does not exist in a state that the plurality of said conductive powder constituting said conductive paste is set to  
5 be capable of abutting on the said wiring layer;

sticking said conductor foil to said insulator layer;  
and

electrically and physically joining said conductor foil and said conductive paste by abutting the plurality of said  
10 conductive powders and said conductor foil each other by means of heating and pressurizing for said insulator layer.

14. The circuit board manufacturing method according to Claim 13, wherein said protective agent is stored and placed  
15 into a minute recess in said adhesion surface by abutting a adhesive surface of said conductor foil on a protective agent containing liquid, while a storage amount of said protective agent for said minute recess is controlled by adjusting an abutting time of said protective agent containing liquid,  
20 thereby setting each dimension of the adhesion surface regions where said protective agent does not exist.

15. The circuit board manufacturing method according to Claim 13, wherein said protective agent is stored and placed  
25 into the minute recess in the adhesion surface by abutting the adhesion of said conductor foil on the protective agent containing liquid, while the storage amount of said protective agent for said minute recess is adjusted by adjusting a protective agent containing amount of said protective agent  
30 containing liquid, thereby setting each dimension of the adhesion surface regions where said protective agent does not exist.

16. The circuit board manufacturing method according to Claim 13, wherein a layer containing said protective agent is formed on the adhesion surface of said conductor foil, and then the protective agent layer is polished to such an extent  
5 that a top portion of a minute protrusion on said adhesion surface may be exposed, while a exposed amount of said top portion is adjusted at a time of polishing, thereby setting each dimension of the adhesion surface regions where said protective agent does not exist.

OFFICE OF THE ATTORNEY GENERAL